

LONDON- WEST MIDLANDS ENVIRONMENTAL STATEMENT

Volume 5 | Technical Appendices

CFA24 | Birmingham Interchange and Chelmsley Wood

Survey reports (CH-004-024)

Cultural heritage

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Department
for Transport

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1 Introduction

1.1 Structure of the cultural heritage appendices

1.1.1 The cultural heritage appendices for the Birmingham Interchange and Chelmsley Wood area (CFA24) comprise:

- baseline reports (Appendix CH-001-024);
- a gazetteer of heritage assets (Appendix CH-002-024);
- impact assessment (Appendix CH-003-024); and
- survey reports (this appendix).

1.1.2 Maps referred to throughout the cultural heritage appendices are contained in the Volume 5, Map Book Cultural heritage.

1.2 Surveys undertaken

1.2.1 This appendix contains the results of extensive archaeological surveys undertaken. Key surveys reported in this appendix include:

- LiDAR survey of the majority of the construction area;
- hyperspectral survey of the majority of the construction area;
- geophysical surveys at two locations along the route encompassing 16 hectares; and
- aerial photographic survey of the majority of the construction area.

2 LiDAR survey report

2.1 Introduction

2.1.1 This report describes the results of the interpretation of LiDAR data that was undertaken to identify potential previously undiscovered archaeological assets within the study area. The methodology is described and the significance of the results is discussed.

2.2 Methodology

2.2.1 LiDAR data was analysed in order to identify previously unknown heritage assets that comprise an upstanding component (earthworks or ditches), and to supplement existing data for known heritage assets. The interpretation was undertaken of 1m resolution Digital Elevation Model (DEM) data, using Esri ArcMAP 10.0. The data was visualised using ArcMAP's 'hillshade effect' function; the height ('z') data was exaggerated by a factor of 20 to assist in identifying features that may exist only as slight earthworks.

2.2.2 Interpretation was undertaken for the full extent of data available, including areas that lie outside of land required for construction; this enabled the features identified within the land required for construction to be examined within the context of the wider study area.

2.2.3 In order to have confidence that all notable features had been identified the data was subjected to simulated illumination. For this process the data was artificially lit from different directions and angles to highlight areas of archaeological potential. This process was undertaken as follows:

- Azimuth (direction of illumination): north, east, south, west, north-east, south-east, south-west, north-west; and
- Altitude (angle of illumination): The data was illuminated at an angle of 45°, as this was found to be the optimum angle for identification of features. At angles less than or greater than 45°, features became increasingly less clear as the angle decreased or increased.

2.3 Limitations

2.3.1 Historic Environment Record data for non-designated heritage assets and English Heritage National Heritage List data for designated assets was up-to-date when obtained by HS2 Ltd in 2012. Any assets added to these databases, after that time, will not have been available as a reference during the course of this survey.

2.3.2 Where archaeological sites have been identified solely from LiDAR, without confirmation from archaeological excavation or supporting evidence such as findspots, it should be noted that the interpretation may be revised in the light of further investigation.

2.3.3 It should be stressed that the absence of an archaeological feature on remote sensed imagery does not confirm its absence in the ground, as visibility from the air is sometimes dependent upon a complex combination of factors. These include:

- unsuitable conditions at the time of image capture (such as lighting, ground moisture content and crops or other ground cover);

- variable quality of photography;
- underlying features being masked by alluvial build-up; and
- areas where archaeological features either do not survive or have never existed.

2.4 Assumptions

2.4.1 No assumptions are noted for the data or survey methods for this study area.

2.5 Results

2.5.1 Analysis of LiDAR data successfully identified 32 areas of interest within the study area. The sites are listed in Table 1.

Table 1: LiDAR survey - identified areas of interest from LiDAR interpretation

Unique identifier	Description	Feature number	Geographical location	NGR (site centred)
BIC115	Ridge and furrow	L21	South of B4438, west of M42	E419726, N284891
BIC107	Ridge and furrow	L22	North of motorcycle park	E420338, N284383
BIC118	Linear feature/ditch	L23	West of motorcycle park	E420044, N284323
BIC101	Former channel	L24	West of Middle Bickenhill Lane	E419980, N284028
BIC116	Former channel	L25	West of Middle Bickenhill Lane	E420088, N284037
BIC113	Former channel	L26	West of Middle Bickenhill Lane	E420270, N283982
BIC114	Linear feature/ditch	L27	West of Middle Bickenhill Lane	E419951, N283916
BIC117	Linear feature/ditch	L28	West of Middle Bickenhill Lane	E420257, N283890
BICo48	Linear feature/ditch	L29	West of Middle Bickenhill Lane	E419992, N284003
BICo40	linear feature	L30	West of Middle Bickenhill Lane	E420007, N283783
BIC122	Old road from Hampton to Coleshill which crossed Holywell Brook by the Westaneford, north of Middle Bickenhill	L31	West of Middle Bickenhill Lane	E420052, N283763
BIC121	Linear feature/ditch	L32	West of Middle Bickenhill Lane	E420177, N283678
BIC110	Ridge and furrow	L33	East of Middle Bickenhill Lane	E420339, N283696
BIC119	Ridge and furrow	L34	West of Middle Bickenhill Lane	E420271, N283619
BIC112	Ridge and furrow	L35	East of Middle Bickenhill Lane	E420459, N283584
BIC120	Ridge and furrow	L36	West of Middle Bickenhill	E420246, N283466
BICo31	Linear feature/ditch	L37	West of Middle Bickenhill	E420133, N283500
BICo41	Linear feature/ditch	L38	West of Middle Bickenhill	E420180, N283504
BIC109	Possible clay pit	L39	East of Middle Bickenhill, west of former railway embankment	E420614, N283428
BIC106	Possible clay pit	L40	East of former railway embankment	E420813, N283318
BIC104	Circular earthwork	L41	South of intersection of A452 Chester Road and former railway embankment	E420928, N283604

Unique identifier	Description	Feature number	Geographical location	NGR (site centred)
BIC105	Ridge and furrow, boundaries, trackway	L42	North of A45, east of former railway embankment	E420681, N283198
BICo99	Earthwork/boundaries	L43	South-west of Hall Pool	E421448, N283497
BICo98	Ridge and furrow	L44	West of Mill Shrubbery	E421644, N283424
BICo96	Ridge and furrow	L45	East of Mill Shrubbery	E421868, N283574
BIC100	Ridge and furrow	L46	West of The Mill Farm	E421552, N283411
BICo95	Ridge and furrow	L47	East of The Mill Farm	E422003, N283236
BICo97	Ridge and furrow	L48	Geary's Heath	E422084, N282890
BIC111	Possible gravel pit	L49	Between Middle Bickenhill Lane and former railway embankment	E420559, N283533
BIC103	Ridge and furrow	L50	West of Geary's Heath, east of A452	E421618, N282841
BIC102	Ridge and furrow	L53	West of Geary's Heath, east of A452	E421673, N282731
BICo05	Ridge and furrow	L54	West of Geary's Heath, east of A452	E421873, N282484

2.6 Description

2.6.1 There are a number of areas of ridge and furrow identified within the LiDAR results indicating the agricultural history of the study area and the preservation in the more rural areas of this historical landscape. The identification of a number of linear channels and ditches reflects the marshy and waterlogged nature of this low-lying study area and the identification of former gravel pits and clay pits shows the continuity of the extraction of the natural resources in this area, from the small scale-pits evident from the LiDAR to the large scale sand and gravel quarries, which exist today.

2.7 Interpretation

2.7.1 A broad range of features was identified by the LiDAR interpretation.

2.7.2 In the north-west and western parts of the study area a number of linear features were identified. These features have been interpreted as drainage ditches, evidence of former watercourses, probable former field boundaries, historical flood alleviation for the field to the south of Hollywell Brook and a trackway.

2.7.3 The analysis also identified areas of former industrial activity in the form of circular depressions and earthworks, which are likely to be the remains of gravel pits.

2.7.4 To the south of the A45 Coventry Road is a feature that appears to take the form of a rectilinear ditch, suggestive of a medieval moated site. These sites are relatively common in the area, however this site is currently unrecorded and therefore its discovery is noteworthy; in particular in relation to its proximity to the medieval settlement of Hill Bickenhill. It should be noted however that further investigation would be required to confirm the precise nature of this feature.

2.7.5 Ridge and furrow is widespread throughout the study area.

2.7.6 All the features identified by the LiDAR interpretation are considered to be of local significance.

2.8 Conclusion

2.8.1 The LiDAR interpretation was successful in identifying archaeological features that were previously unknown. It is interesting to note that the prevalent feature type identified was ridge and furrow. While this feature type is well documented within the West Midlands, and some areas shown on the LiDAR concur with known sites, the majority of surviving ridge and furrow identified by the LiDAR are previously unknown.

2.9 Figures

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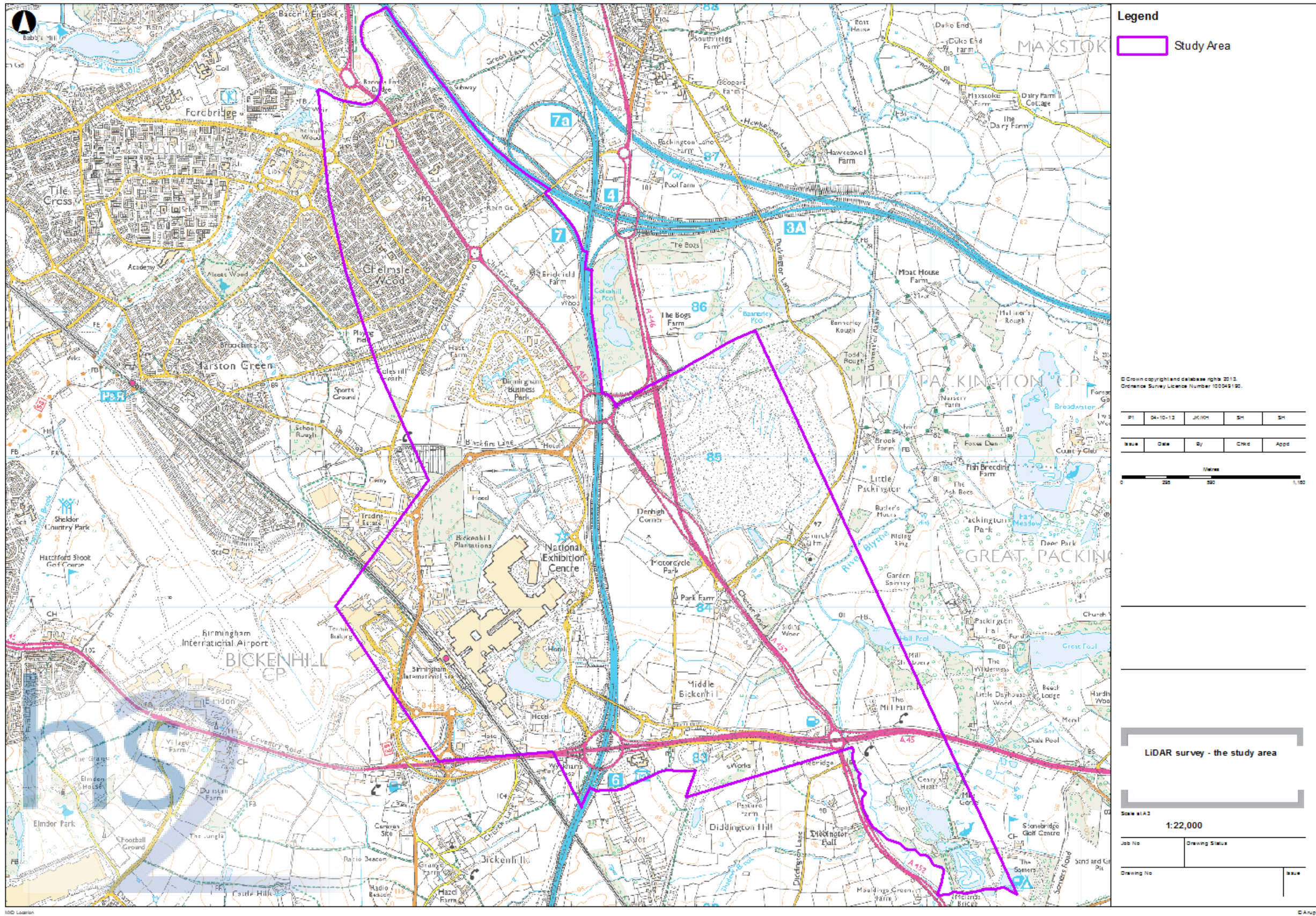
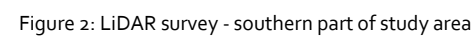


Figure 1: LiDAR survey - the study area



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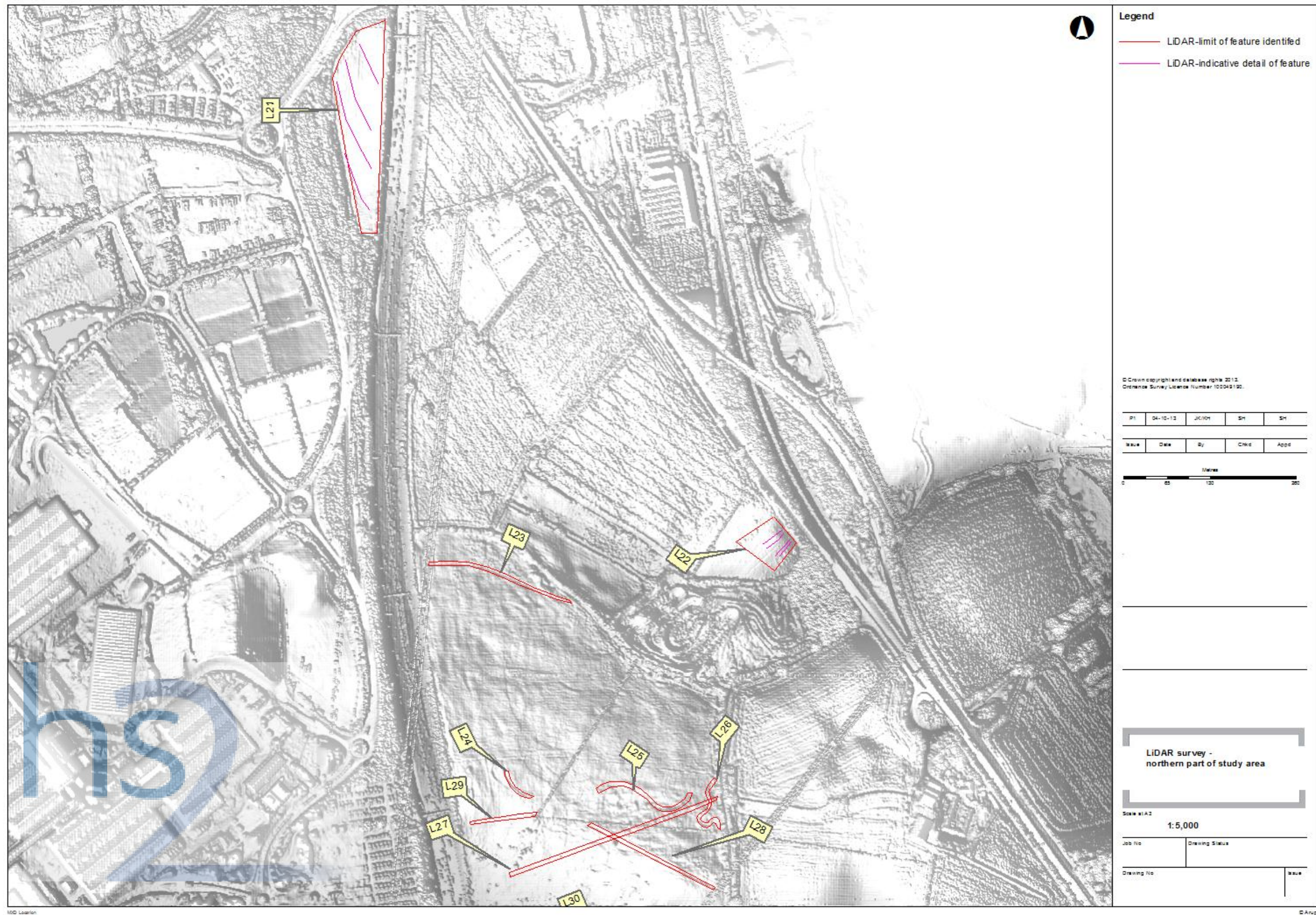


Figure 3: LiDAR survey - northern part of study area

3 Hyperspectral survey report

3.1 Introduction

3.1.1 This report describes the results of the analysis of hyperspectral data that was undertaken to identify potential previously undiscovered archaeological assets within the study area. The methodology is described and the significance of the results is discussed.

3.2 Methodology

3.2.1 There is no standard methodology for assessing hyperspectral data. Data is acquired at a number of wavelengths, each of which has the potential to show the presence of buried archaeological remains. The technique relies on soils within archaeological features reflecting different wavelengths of light from the surrounding soil, however there is no way to determine the most effective wavelength without reviewing all available wavelengths, as all geologies possess different qualities.

3.2.2 The data received was divided into 34 'bands' with wavelengths ranging from 406.48 nm to 992.59 nm. The entire study area was reviewed for each of the 34 bands using ArcGIS 10, and where possible archaeological features were identified the outlines of these were marked as polygons as an ArcGIS shapefile.

3.3 Limitations

3.3.1 Historic Environment Record data for non-designated heritage assets and English Heritage National Heritage List data for designated assets was up-to-date when obtained by HS2 Ltd in 2012. Any assets added to these databases, after that time, will not have been available as a reference during the course of this survey.

3.3.2 Where archaeological sites have been identified solely from the review of hyperspectral data, without confirmation from archaeological excavation or supporting evidence such as findspots, it should be noted that the interpretation may be revised in the light of further investigation.

3.3.3 It should be stressed that the absence of an archaeological feature on remote sensed imagery does not confirm its absence in the ground, as visibility from the air is sometimes dependent upon a complex combination of factors. These include:

- unsuitable conditions at the time of image capture (such as lighting, ground moisture content and crops or other ground cover);
- variable quality of photography;
- underlying features being masked by alluvial build-up; and
- areas where archaeological features either do not survive or have never existed.

3.4 Assumptions

3.4.1 No assumptions are noted for the data or survey methods for this study area.

3.5 Results

3.5.1 The review of hyperspectral data within this study area identified no potential archaeological features that were not known of previously. It is likely that the agricultural nature and geology of the area contributed to this lack of results.

3.6 Description

3.6.1 The survey technique employed was unsuccessful in identifying archaeological assets. This appears to have been a result of the agricultural nature and geology of the area.

3.7 Interpretation

3.7.1 Due to no archaeological assets being identified, interpretation was not undertaken.

3.8 Conclusion

3.8.1 The review of the hyperspectral data was not able to identify any potential archaeological features within the study area. It is likely that this is due to the agricultural nature and geology of the area.

4 Geophysical survey report

4.1 Introduction

- 4.1.1 Geophysical survey was conducted over two predefined areas near Middle Bickenhill, hereafter referred to as 'Interchange' (NGR SP201837) and 'Pasture Farm' (NGR SP208828). The aim of the survey was to locate and characterise any anomalies of possible archaeological interest within the study areas.
- 4.1.2 Interchange lies immediately to the east of the M42 and west of Middle Bickenhill Lane, in the parish of Bickenhill, Solihull district. The study area is relatively level within the southern fields but then rises northwards. The ground cover was rough pasture with some areas overgrown with scrub, bushes, trees and rushes.
- 4.1.3 Pasture Farm is in the parish of Hampton-in-Arden, also in the Solihull district, and encompassed fields immediately south of the A45 Coventry Road, north-east of Pasture Farm. The site was predominantly flat with the western fields being under pasture and the eastern field unsurveyable due to a potato crop.
- 4.1.4 Both sites lie on Mercia Mudstone bedrock with superficial glaciofluvial deposits of sand and gravel from the Devensian at Interchange and mid-Pleistocene deposits at Pasture Farm; the latter also has a band of alluvium running through the site immediately south of the aforementioned scarp¹. The soils are classified as coarse loamy deposits of the Arrow (543) association at Pasture Farm and to the south of the scarp through Interchange; the remainder has reddish fine loamy over clayey soils of the Brockhurst 1 (711b) association².
- 4.1.5 LiDAR data from Pasture Farm suggests evidence of a slight rectilinear earthwork³ whilst on the western edge of Interchange is the site of Warren Farm, demolished around the time of the National Exhibition Centre (NEC)/M42s construction⁴.

4.2 Methodology

- 4.2.1 All survey grid positioning was carried out using Trimble R8 Real Time Kinematic (RTK) VRSNow equipment. The geophysical survey areas are georeferenced relative to the Ordnance Survey National Grid by tying in to local detail and corrected to the mapping provided by the client. These tie-ins are presented in Figure 14. Please refer to this diagram when re-establishing the grid or positioning trenches.
- 4.2.2 The magnetometer survey was carried out with Bartington Grad 601-2 fluxgate gradiometers, collecting data every 0.25m along traverses 1m apart. Data processing has been performed as appropriate using an in-house software package (GeoSuB) employing the following processing steps: zero mean traverse, step correction (de-stagger) and interpolation (on the Y axis). All survey work is carried out in accordance with the current English Heritage guidelines⁵.

- 4.2.3 Data are presented as greyscale and XY trace plots. The former allows simple feature identification and basic interpretation whilst the latter allows for analysis of the shape of the individual anomalies in order to better characterise the recorded responses.

4.3 Limitations

- 4.3.1 Magnetic survey is an exceedingly effective technique for site evaluation providing fast data acquisition and responding, to some degree, to the majority of archaeological site-types. The technique relies upon enhancement of naturally occurring iron-bearing compounds in the soil through anthropogenic activity. Detection rates can be poor where archaeological sites have only seen temporary and/or sporadic occupation or where there is insufficient activity to drive the enhancement; this is often true of Lithic-era sites. Success may also be limited over soils that are deficient in iron compounds, providing little material to be subject to enhancement. Conversely, the strength of response from soils and geological units which are naturally magnetic, for example igneous formations and soils derived thereof, may mask any subtler archaeological enhancement within.
- 4.3.2 The presence of ferrous structures either above or below ground (buildings, transmission towers, fences, pipes etc.) will produce very strong magnetic fields which will extend far beyond their physical footprint. The strength of these magnetic 'shadows' is such that it will mask practically any archaeological anomalies. Similarly, later features and demolition spreads or imported consolidation material can produce areas of magnetic disturbance that will mask underlying features.
- 4.3.3 As a general rule, the Bartington Grad601 instruments allow for a depth of investigation of approximately 1m, depending on the strength of the field produced by the buried feature; below this depth only particularly enhanced material will be detected with any kind of confidence.
- 4.3.4 At Interchange, some minor positional errors will have been introduced during data collection through the longer vegetation and over areas which were particularly rutted by cattle, primarily amongst the rushes. These have been corrected for at the processing stage and not had a detrimental effect on the overall data quality.
- 4.3.5 At Pasture Farm, it was not possible to survey the eastern part (see Figure 5) as the field was very deeply ploughed for a potato crop.

4.4 Assumptions

- 4.4.1 All of the fields contain small-scale ferrous anomalies, most clearly represented by sharp 'spikes' in the XY trace plots, and are typically assumed to be modern debris within the topsoil unless the site type or a priori knowledge suggests otherwise.

¹ BGS 2013, British Geological Survey, Geology of Britain Viewer, 1:50,000 scale geology, centred on 420490, 283189 [online]. Available at: <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>; [Accessed 08/07/2013].

² SSEW (1983) *Soils of England and Wales: Sheet 3 Midland and Western England*. Soil Survey of England and Wales, Harpenden

³ Arup, pers. comm.

⁴ P.Hemmingway, pers. comm

⁵ English Heritage (2008) *Geophysical Survey in Archaeological Field Evaluation*

4.5 Results

Description

Interchange

4.5.1 The data sets are dominated by magnetic disturbance resulting from spreads of ferrous material with a strong magnetic signature. Clearly there is a zone in the south of Area 1A within one of the spreads of disturbance where the strength and character of response is significantly different, showing a broad positive anomaly with a negative halo, characteristic of a strong magnetic response. Another broad zone of positive response can be seen at the northern limits of Area 2A.

4.5.2 Between the zones of magnetic disturbance there are a small number of narrow linear anomalies relatively close together, crossing the northern half of the site. In Area 2A, a somewhat broader linear band of ferrous disturbance has been recorded in an otherwise relatively 'quiet' part of the survey area, aligned approximately north-south. Throughout, these magnetically 'quieter' areas are isolated, small scale ferrous responses.

Pasture Farm

4.5.3 The surveyable areas lie either side of an access track.

4.5.4 South of the track (Area 3A), there are a number of responses. The southern end of the site shows very faint banding in the background magnetic response, running north-east–south-west. There is a pair of segmented linear anomalies parallel to each other, approximately north–south, and a ferrous zone of increased response runs through the area. A number of isolated small ferrous anomalies have been recorded throughout.

4.5.5 North of the track (Area 3B), there is nothing but ferrous anomalies with very strong responses along the western edge.

4.6 Interpretation

Interchange

4.6.1 Although intense industrial activity, in antiquity, can produce large spreads of ferrous disturbance, this is not likely to be the case in this instance. On-site discussion with the farmer, towards the end of the survey, revealed that the majority of the site north of the scarp had been remodelled using imported demolition material. The same was also said to be true south of the site, only leaving the flat fields immediately adjacent to the brook beneath the escarpment unaffected.

4.6.2 Historic Ordnance Survey (OS) mapping⁶ reveals that the large positive response in Area 1A was the site of a marl pit which has obviously been backfilled with magnetically enhanced material. Demolition material and remnants of Warren Farm will account for much of the disturbance down the western side of the northern fields. The longer, southernmost linear anomaly correlates with a scrubbed out field boundary shown on the present mapping (bits of barbed wire were still visible within the grass) whilst the divergent linear response is

coincident with a boundary shown on the older mapping. The final narrow response does not correlate with any of the available mapping and it is unclear whether its orientation, running towards an adjacent communication mast compound is coincidental or not; it is therefore categorised as 'uncertain origin'.

4.6.3 The linear band of disturbance in Area 2A matches a raised earthwork running through that part of the field, upon which a gravelly surface material can be seen through the grass. This is therefore assumed to be a former track of some description but, given the surfacing material, not one of any great antiquity.

4.6.4 The zone of positive response in Area 2A at the survey edge is the limit of the magnetic 'halo' surrounding a National Grid pylon.

Pasture Farm

4.6.5 In the southern survey area, the very faint banding is characteristic of historical ridge and furrow cultivation practices. The band of ferrous response is evidence of a scrubbed out field boundary shown on historical OS maps, whilst the segmented linear responses match the course of a former track predating this boundary but also shown on early mapping; the anomalies may represent either some kind of drain or the remnants of a fence line flanking the track and are classed as of uncertain origin.

4.6.6 No geophysical responses typical of archaeological remains have been recorded north of the track, but the ferrous response in the west could be a reflection of the former, now demolished, brickworks adjacent to the site as shown on OS maps of the area.

4.7 Conclusion

4.7.1 Very faint linear responses are thought to indicate former ridge and furrow cultivation and, as such, are the indications of archaeological activity, in the results. The remainder of the anomalies can be attributed to either former field boundaries and tracks or relatively modern disturbance. These were brought about by remodelling of the landscape through the wholesale importing and grading of material across the Interchange site. This included the demolition of Warren Farm and the filling-in of a former marl pit. All of this activity has produced widely spread zones of intense magnetic disturbance, resulting from high concentrations of ferrous debris, within the material, dumped on the fields at the time of the NEC and M42 construction.

4.8 References

- 4.8.1 BGS 2013, British Geological Survey, Geology of Britain Viewer, 1:50,000 scale geology, centred on 420490, 283189 [online]. Available at: <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>; [Accessed 08/07/2013].
- 4.8.2 English Heritage (2008). *Geophysical Survey in Archaeological Field Evaluation*.
- 4.8.3 OS 2013, Old-Maps 1887, 1904, 1937, 1954' 1:2,500, Warwickshire, centred on 420490, 283189 [online]. Available at: <http://www.old-maps.co.uk>; [Accessed 08/07/2013].
- 4.8.4 SSEW (1983). *Soils of England and Wales: Sheet 3 Midland and Western England*. Soil Survey of England and Wales, Harpenden.

⁶ OS 2013, Old-Maps 1887, 1904, 1937, 1954' 1:2,500, Warwickshire, centred on 420490, 283189 [online]. Available at: <http://www.old-maps.co.uk>; [Accessed 08/07/2013].

4.9 **Figures**

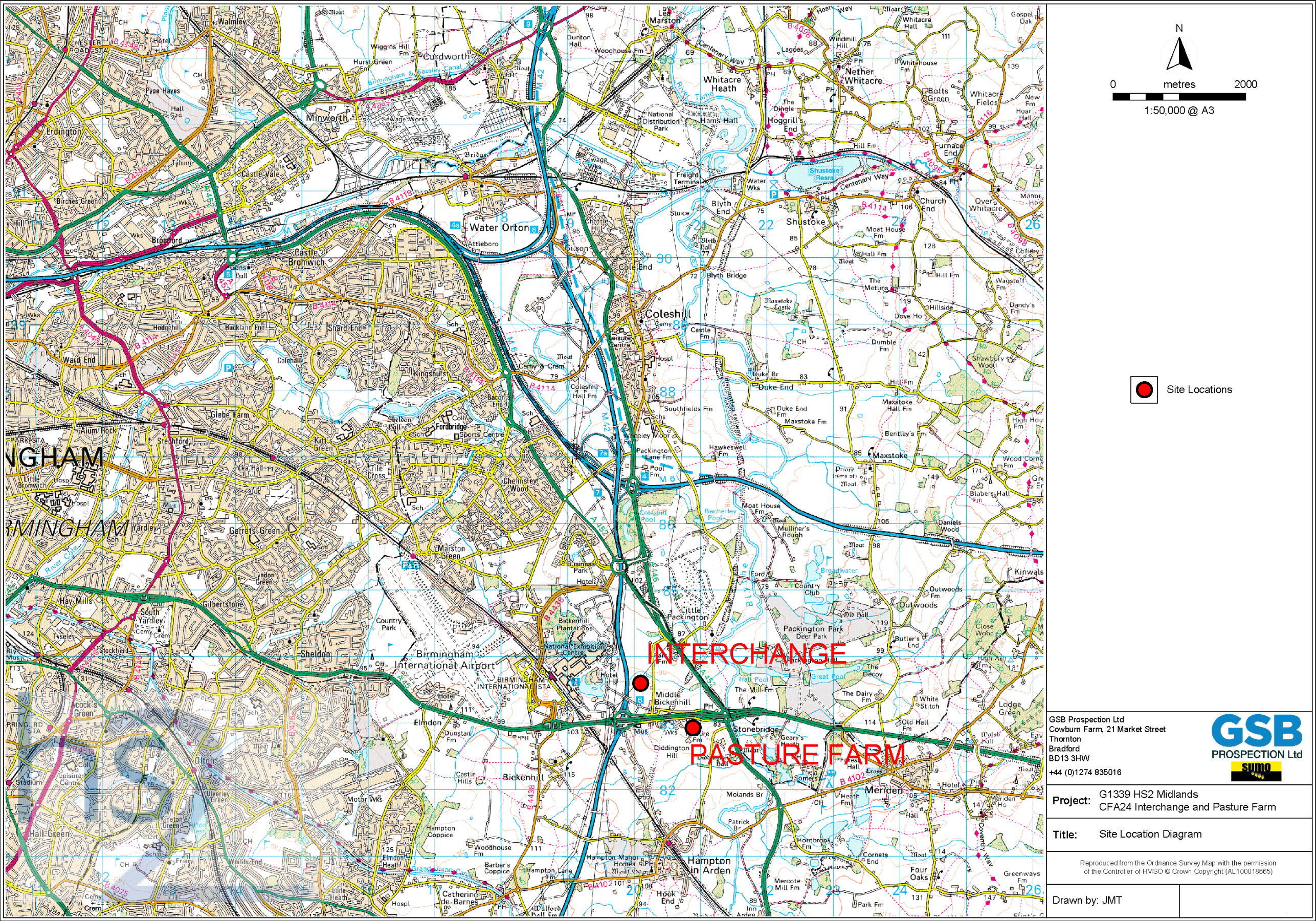


Figure 4: Geophysical survey - site location

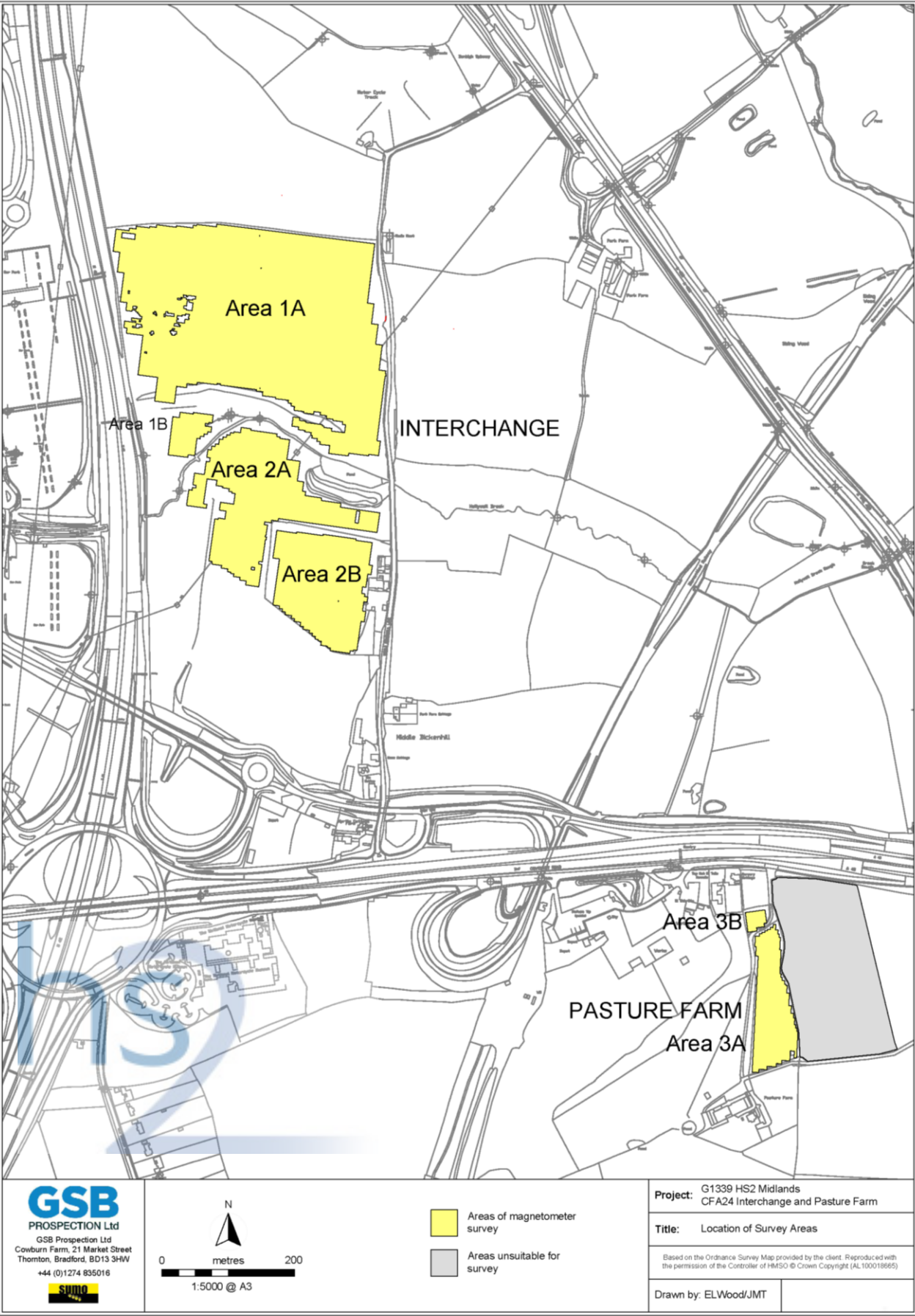


Figure 5: Geophysical survey - location of survey areas



Figure 6: Geophysical survey - greyscale plot - Interchange

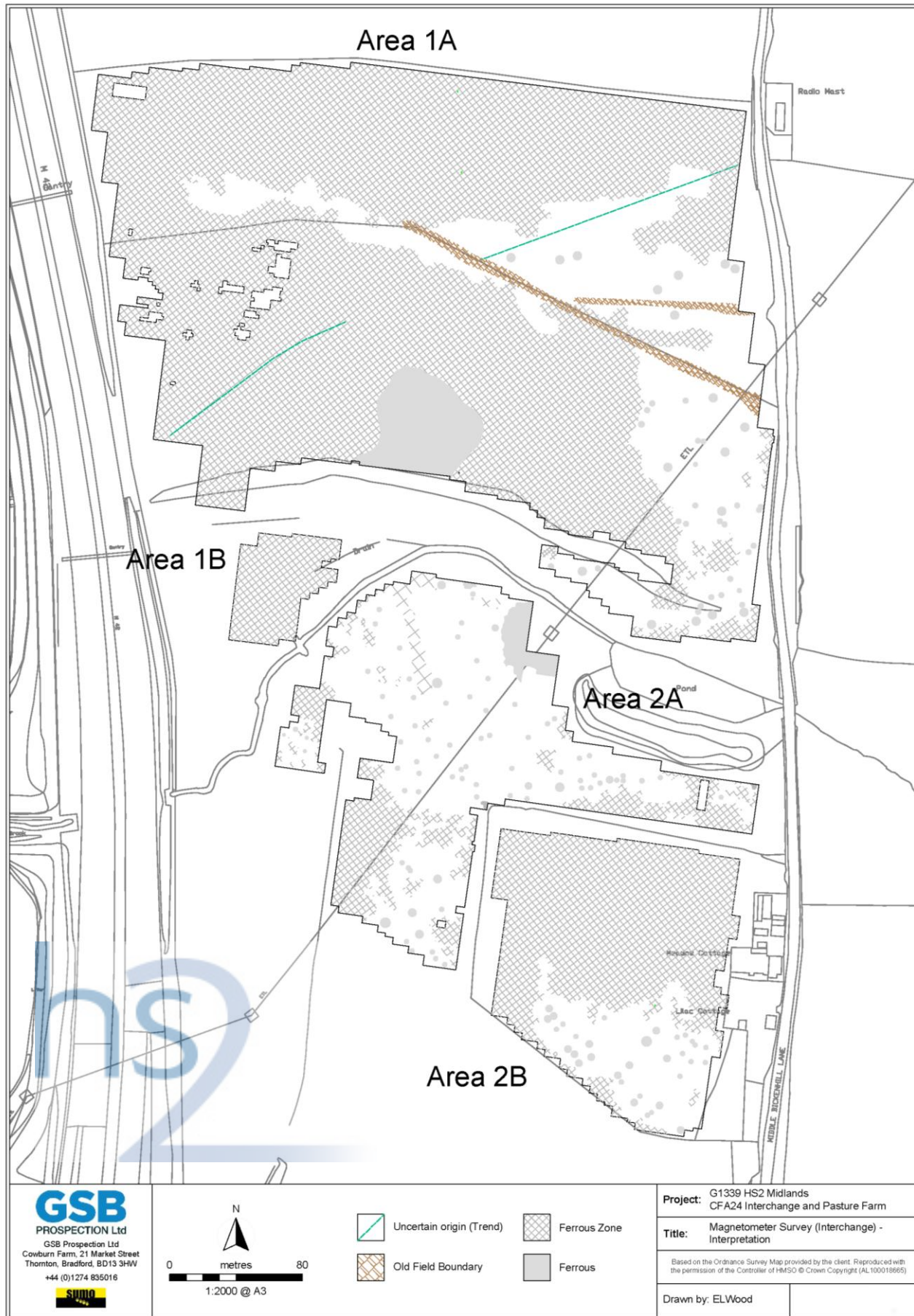


Figure 7: Geophysical survey - interpretation - Interchange



Figure 8: Geophysical survey - greyscale plot and interpretation - Pasture Farm

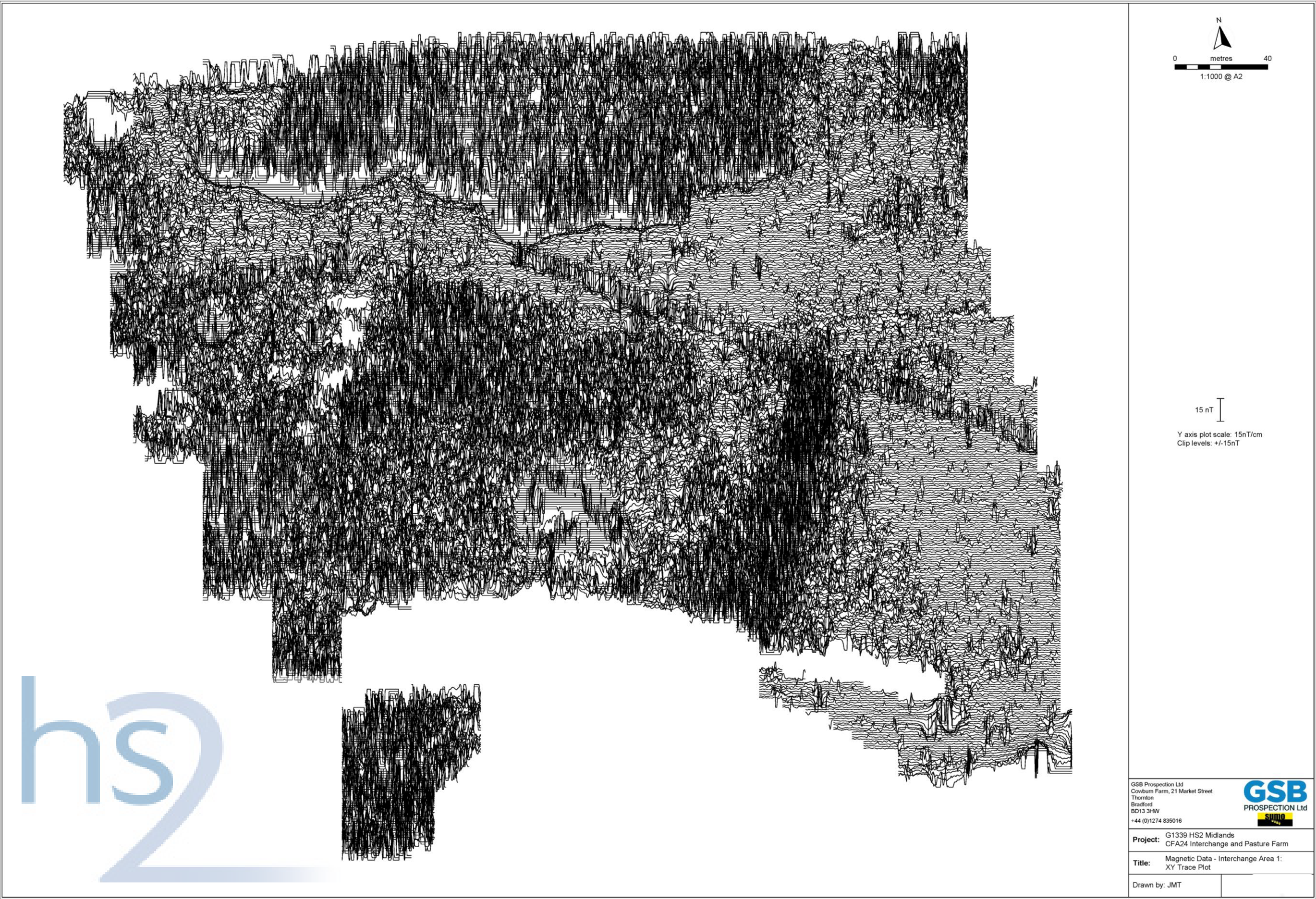


Figure 9: Geophysical survey - magnetic data - Interchange area 1, XY trace plot

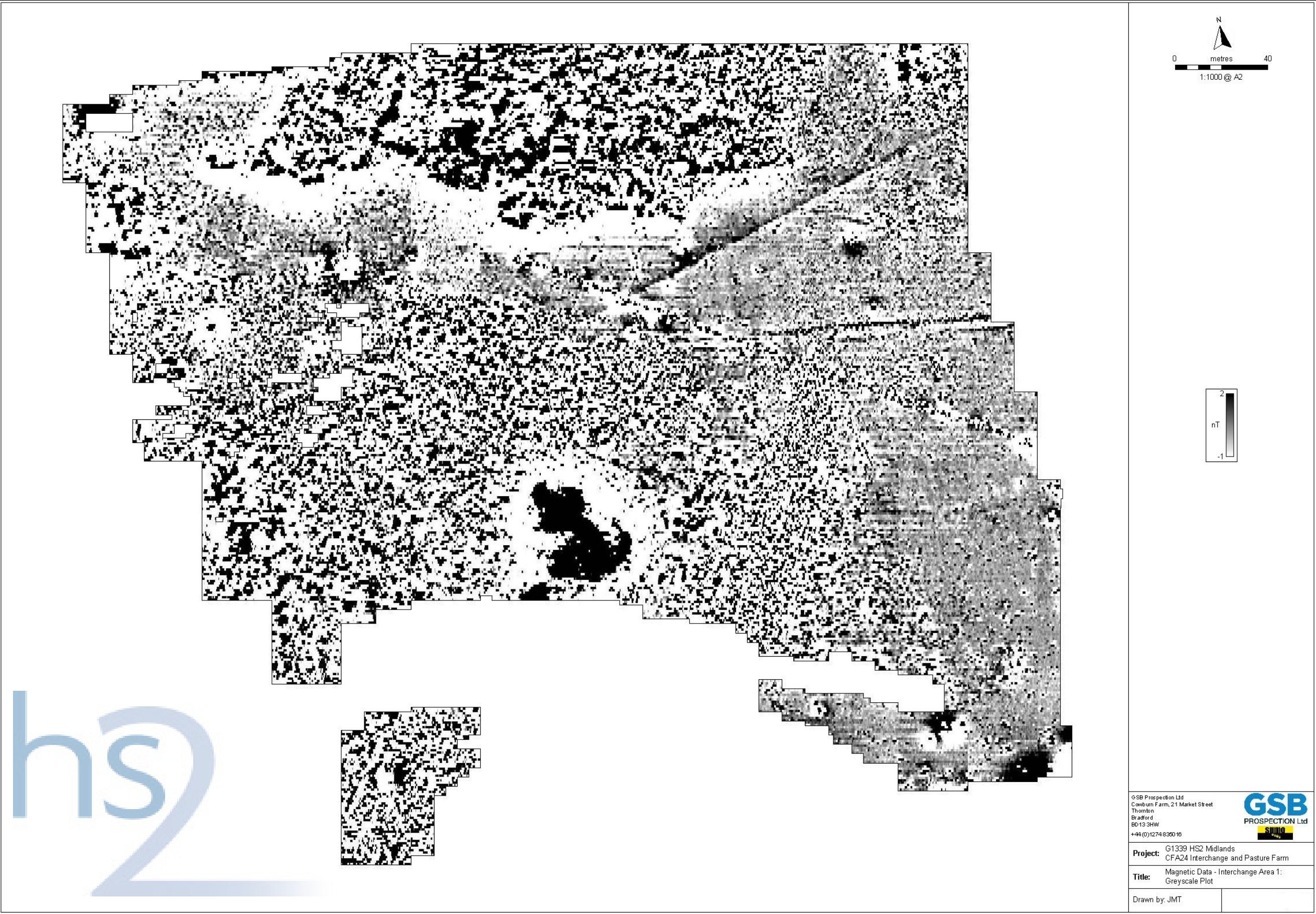


Figure 10: Geophysical survey - magnetic data - Interchange area 1, greyscale plot

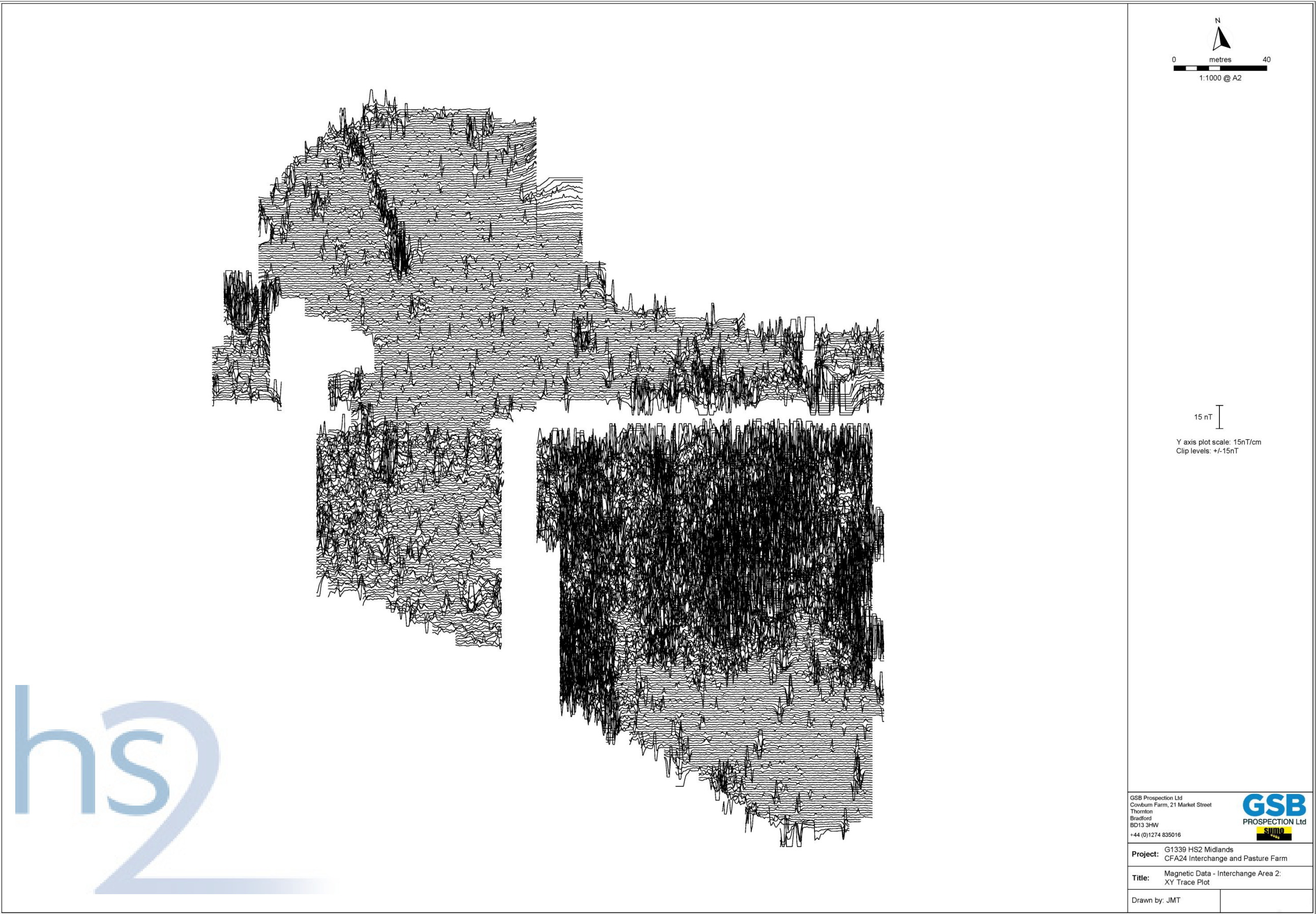


Figure 11: Geophysical survey - magnetic data - Interchange area 2, XY trace plot

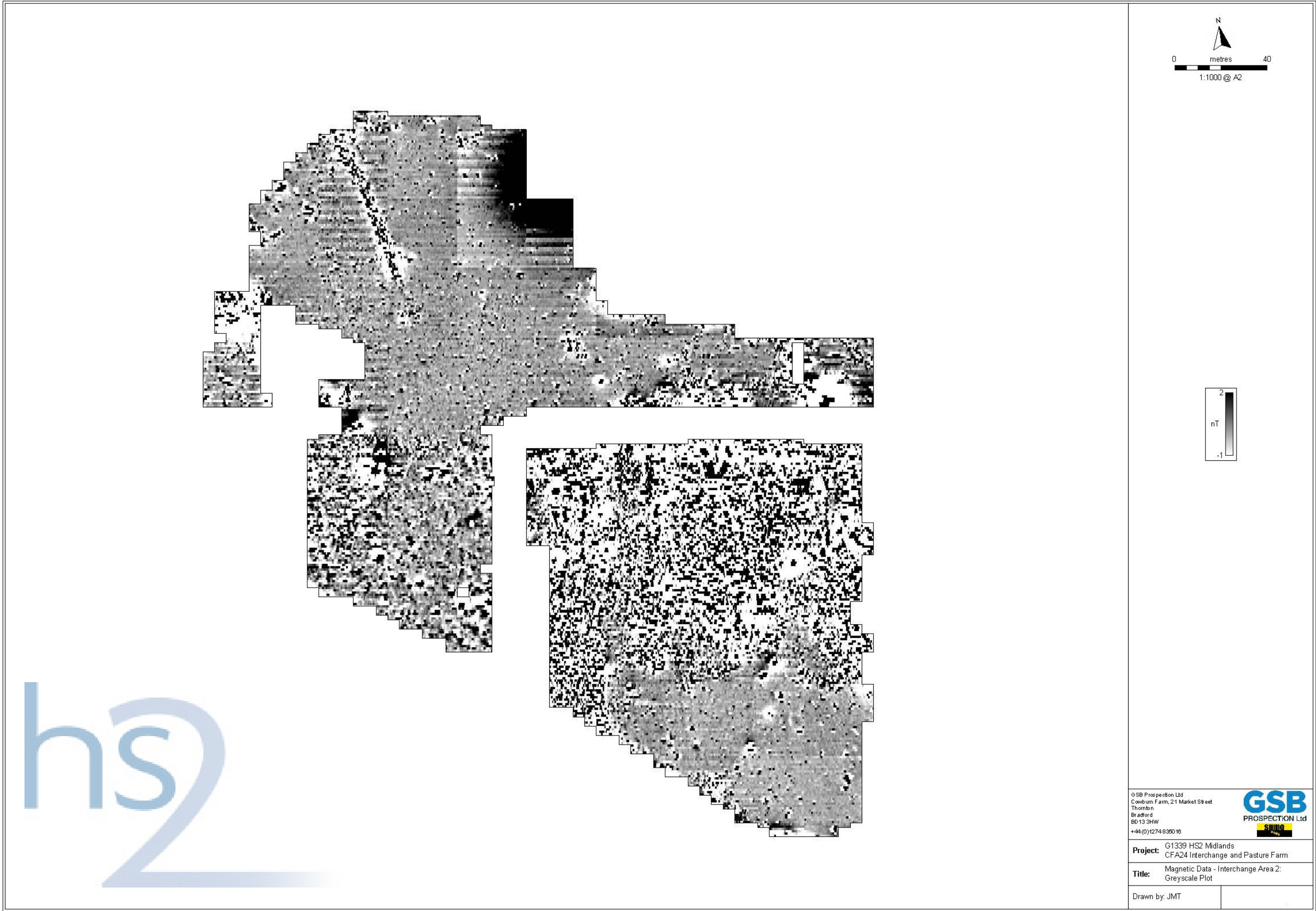


Figure 12: Geophysical survey - magnetic data - Interchange area 2, greyscale plot

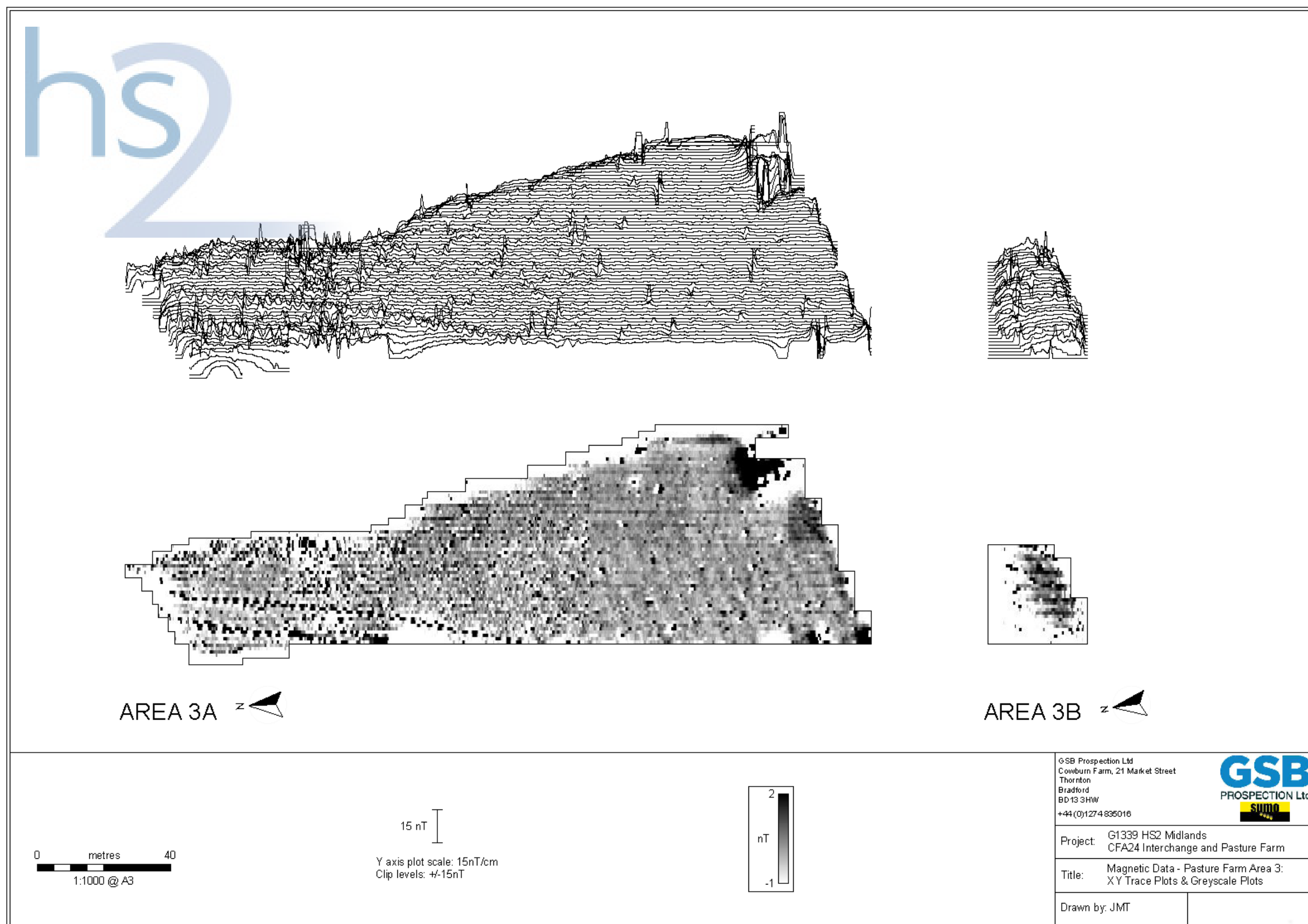


Figure 13: Geophysical survey - magnetic data - Pasture Farm area 3, XY trace plot and greyscale plot

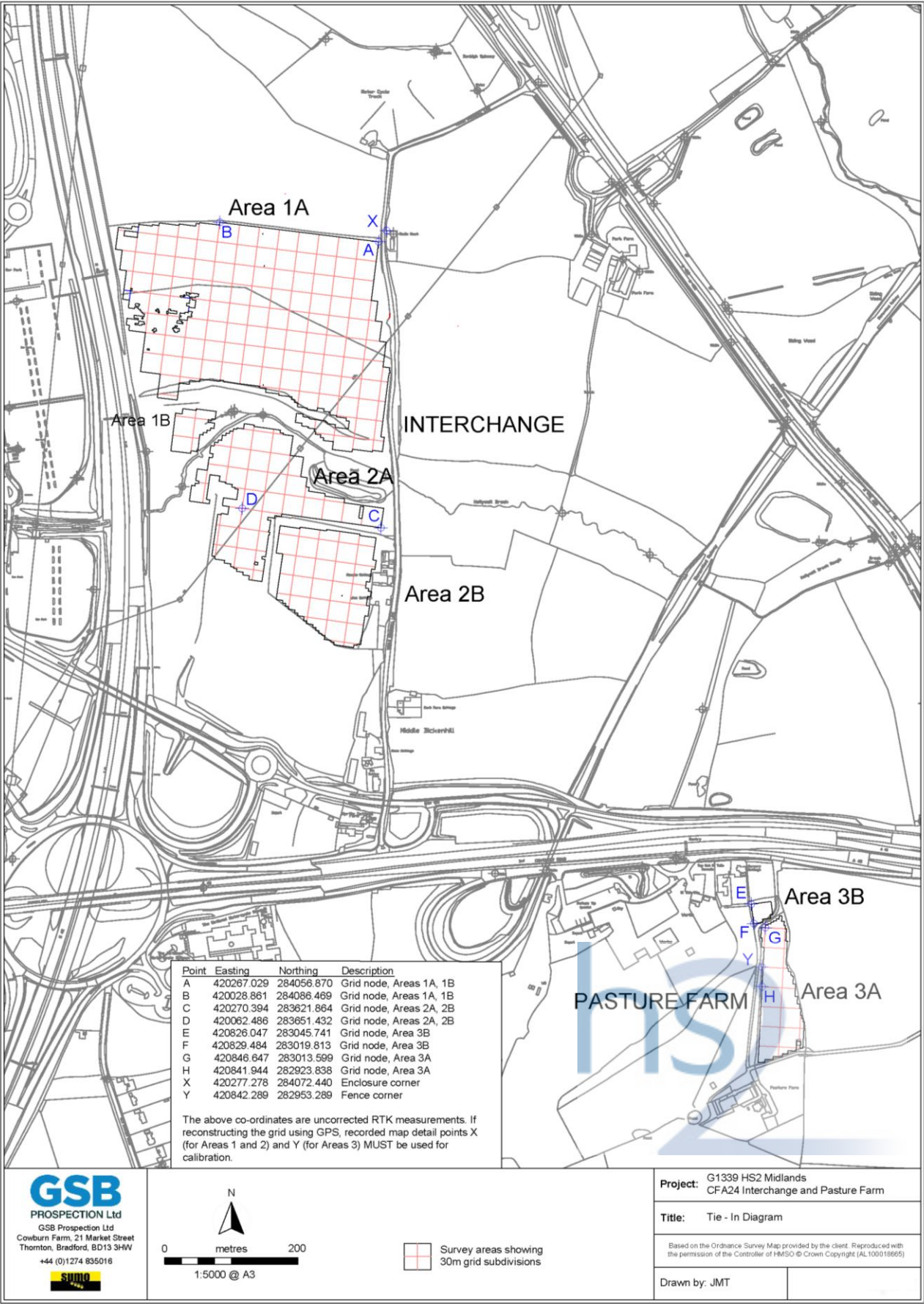


Figure 14: Geophysical survey - tie-in diagram

5 Aerial photographic survey report

5.1 Introduction

- 5.1.1 The report was prepared to support the assessment of cultural heritage assets that may be affected by the Proposed Scheme.
- 5.1.2 The object of this aerial photographic assessment was to provide information on the location, nature, condition and significance of archaeological sites and areas which are visible on aerial photographs within the study area (Figure 15). All periods of prehistory and history were considered during the assessment. The assessment identifies areas where aerial photographs are of assistance in assessing the heritage potential of a site or area and facilitates determination of areas where more detailed mapping and analysis may be appropriate at a future stage of investigation.
- 5.1.3 Historical aerial photographs also highlight the past heritage assets of an area such as this, where intensification of agriculture and modern development during the 20th and 21st centuries has eroded, partially obliterated or destroyed remains of sites dating to previous periods.
- 5.1.4 All sites have been accurately located to a digital map base (Figure 16) to facilitate further investigation as appropriate.
- 5.1.5 Figure 15 shows the location of the study area.
- 5.1.6 The study area comprises c. 19 km2 of built over, agricultural land and quarried land between Marston Green and Diddington Hill to the east of Birmingham. Birmingham Business Park and the National Exhibition Centre (NEC) are situated in the western part of the study area.
- 5.1.7 The area is situated between National Grid Reference (NGR) SP 183 880 in the north and SP 191 179 in the south, and centres upon SP 200 840. It lies between 80 and 130m Above Ordnance Datum (AOD).
- 5.1.8 The study area is bisected by the modern M42 and the Rugby to Birmingham line runs through the south-western part.
- 5.1.9 The River Blythe and several other smaller watercourses run through the study area. The main settlements are situated at Chelmsley Wood and Marston Green and the area is traversed by the M42, the modern A452 road and the Rugby to Birmingham line.
- 5.1.10 Some isolated parts of the study area, notably at Chelmsley Wood, Birmingham Business Park and the NEC, have been developed during the latter half of the 20th century, whilst other areas remain as pastoral and arable land with some areas of deciduous woodland.
- 5.1.11 The south-eastern part of the area has been used for sand and gravel extraction, which has left some artificial lakes within former extraction areas.

Archaeology

- 5.1.12 The study area contains recorded heritage assets and findspots that date from the prehistoric periods. Sites Bo1 and Bo6 are newly recorded pre-modern features of unknown origin and may possibly be prehistoric or Romano-British, although this is not confirmed by aerial photographic evidence alone.

- 5.1.13 The study area has potential for the possible presence of buried prehistoric and Romano-British features.
- 5.1.14 A pit alignment, some linear ditches and two ring ditches which indicate possible prehistoric activity were recorded as crop marks to the east and south east of The Somers. Whilst these features lie just outside the study area they indicate a potential for such finds in their vicinity.
- 5.1.15 A crop marked polygonal ditched enclosure was photographed from the air and located just to the south of the study area at The Somers, within Meriden Quarry. This feature was subsequently evaluated⁷ and dated to the early medieval period. It lies outside of the study area.
- 5.1.16 The study area and its environs contain evidence for eroded ridge and furrow and moated sites which indicate medieval agriculture in open fields around small settlements. These settlements are likely to lie beneath the modern villages, although there is some potential for settlement evidence beneath and to the east of the modern NEC.
- 5.1.17 Whilst likely pre-medieval, crop marked features show at two discrete locations in cereal crops or grass; they are by no means visible over the entirety of the area. This may be due to pastoral land use, or to the masking of underlying deposits by ridge and furrow.
- 5.1.18 An 18th century ditched enclosure was present just to the south of the study area at Meriden Quarry. This feature was photographed from the air prior to its investigation and evaluation⁸. This feature lies outside the study area.
- 5.1.19 Where the land has been ploughed for cereal production, there is considerable erosion of formerly upstanding medieval ridge and furrow and these features often now show as marks in crops and grass.
- 5.1.20 **The role of aerial photographic interpretation**
Air photo interpretation provides an overview of landscape history, development and changes in land use. It provides informed guidance for subsequent desk and ground-based investigations and complements cartographic and documentary research. In this case it has identified a series of sites and allowed their precise location to inform future appropriate mitigation strategies.
- 5.1.21 Some information gained from aerial photographs cannot easily be detected by other means. Aerial photographs provide a chronologically documented and seasonal overview of a landscape and sites and features within it. The interpretation of contemporary and archival aerial photography is thus an important component of multi-disciplinary archaeological investigation.
- 5.1.22 Interpretation of aerial photographs allows the definition and in some cases the accurate mapping of archaeological sites or natural features recorded as crop, grass or vegetation marks (caused by the differential growth of plants over buried features); soil marks (caused by differences in soil colour over ploughed buried features), shadows cast by upstanding

⁷ Griffin, S.; Jones, L.; Pearson, E. and Woodiwiss, S. (2000). *Evaluation at Meriden Quarry, Solihull*. Worcestershire County Council Archaeological Services Report.
⁸ Ibid
Lang, N. (1988). *The Somers, Meriden: Trial Excavation*. West Midlands Archaeology CBA Regional Group 8 32/1989 104-105.

earthworks and features seen in relief and the assessments of assets which have been destroyed since the time of photography.

Types

- 5.1.23 Two types of aerial photograph are used for archaeological interpretation. Vertical aerial photographs are taken for general-purpose survey using a camera mounted inside a modified aircraft. The aircraft is flown on a pre-planned set of overlapping flight-lines which cover the survey area completely. The camera points straight towards the ground. The vertical viewpoint provides aerial photographic coverage from a fixed scale and constant 180° angles at the centre of each frame. The overlap between the areas covered by each consecutive frame is usually 60%. This overlap between frames enables the photo interpreter to study each pair of vertical photos under a stereoscope.
- 5.1.24 The stereoscope combines the two images to allow the interpreter to see a single three-dimensional image of the ground surface. Vertical aerial photographs carry inherent distortions introduced by variations in perspective and ground height, but are essentially 'map-like' in appearance. They are generally taken for non-archaeological, civil and military purposes and form the basic data from which most modern maps are compiled. Vertical aerial photographs are a very useful source of archaeological data, particularly in areas such as this, where features survive as earthworks.
- 5.1.25 Oblique aerial photographs are taken using a hand held camera by an aerial archaeologist to portray features which have been identified during specialist survey. These photos are extremely useful, but contain inherent perspective distortions, which must be accounted for in rectification and mapping procedures. In this case, both vertical aerial photographs, and specialist obliques which are taken with a hand held camera by an archaeological surveyor, were available for interpretation. The sources of aerial photographs used for this assessment are detailed below.

English Heritage archive

- 5.1.26 English Heritage, The Engine House, Fire Fly Avenue, Swindon. Air photo enquiry number 78287. This enquiry identified 554 vertical aerial photographs and 115 obliques which were taken between 1935 and 2001.

Cambridge University Collection of aerial photographs (CUCAP)

- 5.1.27 Department of Geography, University of Cambridge. This collection contains oblique aerial photographs taken in 1960 and vertical aerial photographs taken between 1960 and 2001 which were consulted in the CUCAP archive in Cambridge.

Online aerial images

- 5.1.28 The ortho-rectified mosaics of vertical aerial photographs at Google Earth were consulted online for this assessment in June 2013 and included all available timelines from 1945 to 2013.

5.2 Methodology

- 5.2.1 All photographs were interpreted in accordance with the client's brief for works and the Institute for Archaeologists (IfA) Technical Paper 12⁹ and current accepted best practise in accordance with the standards adopted by the English Heritage (EH) National Mapping Programme (NMP).
- 5.2.2 The photographs were closely examined under 1.5x and 4x magnification and interpreted with the aid of a mirror stereoscope where appropriate, with the naked eye, or in detail on screen when consulted as digital files. All interpretations, which were derived from multiple aerial photographs were transcribed to digital map bases as polygons and spot data to locate and identify them and may be digitally rectified to an Ordnance Survey (OS) map base using AirPhoto 3.58 software at a future date if appropriate as part of any further works.
- 5.2.3 The printed map is presently scaled to fit the appropriate paper size (A3) for illustration and it outlines areas which were defined during the project. Any specific alignments such as the direction of former and extant ridge and furrow are indicated by conventional lines and arrows as employed by the EH NMP.
- 5.2.4 Mapping is also provided digitally for import to a Geographical Information System (GIS) in Drawing Exchange Format (DXF) release 12 files as a series of georeferenced digital layers.
- 5.2.5 GIS layers reflect the types and conditions of sites which were recorded. These layers are colour coded, which may be changed if necessary to the project requirements.

5.3 Limitations

- 5.3.1 It is important to note that aerial photographs usually only show part of the horizontal and vertical extent of buried and upstanding features. Their capacity to reveal features as crop marks, vegetation marks, soil marks or as the shadows cast by banks, ditches and walls, depends upon a number of environmental and agricultural factors prevalent at the time of the photographic survey¹⁰.
- 5.3.2 Aerial photographic evidence is thus limited by seasonal, agricultural, meteorological, lighting and environmental factors which affect the extent to which either buried or upstanding archaeological features and structures can be detected.
- 5.3.3 It is thus advantageous to examine a range of photos taken under a variety of environmental conditions in order to build up a comprehensive interpretation of the archaeological landscape. The visibility of archaeological features may differ from year to year and be obscured by differential depths of soil or differing types of vegetation, and individual photographs can often record only a small percentage of the actual extent of buried or upstanding features.
- 5.3.4 These limitations are considered carefully whilst interpreting features from aerial photographs and interpretations are built up from observations of many photographs, if available, over a range of instances of photography.

⁹ Palmer, R. and Cox, C. (1993). *Uses of Aerial photography in Archaeological Evaluations*, IfA Technical Paper 12. IfA Reading.

¹⁰ Riley, D.N.R. (1980). *Early Landscape from the Air*. Sheffield.

Wilson, D. R. (1982 and 2000). *Air Photo Interpretation for Archaeologists*. London and 2nd Ed 2000. Stroud.

5.4 Assumptions

- 5.4.1 All archives have been carefully searched and consulted and it is assumed that all, or the majority of, available aerial photographs held at the archives have been consulted and used for this assessment.
- 5.4.2 Assumptions have been made regarding the limitations of the data as outlined above, and any caveats on interpretations in the light of these limitations have been noted in the results section for each site.

5.5 Results

- 5.5.1 The study area was first photographed by Aerofilms in 1935, then the Royal Air Force (RAF) between the 1940s and 1960s, after which it was photographed from the air by several commercial survey companies and the Ordnance Survey (OS). Aerial archaeologist and former RAF pilot John Kenneth St Joseph also undertook some oblique aerial surveys in the study area in the 1960s and accessioned his photographs to the CUCAP archive of which he was then director. CUCAP also undertook vertical aerial photograph surveys during and after the 1960s.
- 5.5.2 Within the study area, 17 individual polygons were defined which contain or contained heritage assets which are visible on aerial photographs taken between 1935 and 2013.
- 5.5.3 These areas are illustrated on Figure 16 and described in Table 2.
- 5.5.4 The study area contains recorded heritage assets and findspots, which date from the prehistoric periods.
- 5.5.5 There are indications of possible prehistoric or Romano-British crop marked sites at Bo1, a pre-modern curvilinear ditched enclosure and at Bo6, a sub-circular enclosure which was visible as a crop mark in 2011. These sites may possibly be prehistoric or Roman, although this is not confirmed by aerial photographic evidence alone.
- 5.5.6 The study area has potential for the presence of buried prehistoric and possible Romano-British features.
- 5.5.7 A pit alignment, some linear ditches and two ring ditches which indicate possible prehistoric activity were recorded as crop marks to the east and south east of The Somers and whilst they lie just outside the study area they indicate a potential for such finds in the vicinity.
- 5.5.8 A crop marked polygonal ditched enclosure was photographed from the air and located just to the south of the study area within Meriden Quarry. This feature was subsequently evaluated¹¹ and dated to the early medieval period. It lies outside of the study area.
- 5.5.9 There is evidence for extensive medieval farming, possible settlement, moated sites, post medieval boundaries and possible water meadows. The study area and its environs contain extensive evidence for eroded ridge and furrow which indicates medieval agriculture in open fields around small settlements. These settlements are likely to lie beneath the modern

villages, although there is some potential for settlement evidence beneath and to the east of the modern NEC. There is no visible extant ridge and furrow. One area of ridge and furrow, a fishpond and a moat are visible on images at Google Earth 2003, to the immediate west of the study area boundary and site Bog. Bog is likely to contain part of this site and is traversed by an eroded linear earthwork, which could possibly be a modern feature.

- 5.5.10 Whilst possible pre-medieval crop marked features show at discreet locations in cereal crops or grass (Bo1 and Bo6 and outside the study area at and to the south east of Meriden Quarry), they are by no means visible over other parts of the area. This may be due to pastoral land use, modern building and quarrying or to the masking of underlying deposits by ridge and furrow.
- 5.5.11 An 18th century ditched enclosure was present just to the south of the study area at Meriden Quarry. This feature was photographed from the air prior to its investigation and evaluation. Whilst initially interpreted as a Roman military feature on morphological grounds¹², subsequent evaluation dated it to the 18th century¹³.
- 5.5.12 Where the land has been ploughed for cereal production, there is considerable erosion of formerly upstanding medieval ridge and furrow and these features often now show as marks in crops and grass.

5.6 Description

- 5.6.1 Please see Table 2 for descriptions of the sites recorded with the study area.

¹¹ Griffin, S.; Jones, L.; Pearson, E. and Woodiwiss, S. (2000). *Evaluation at Meriden Quarry, Solihull*. Worcestershire County Council Archaeological Services Report.

¹² Lang, N. (1988) *The Somers, Meriden: Trial Excavation*. West Midlands Archaeology CBA Regional Group 8 32/1989 104-105.
¹³ Griffin, S.; Jones, L.; Pearson, E. and Woodiwiss, S. (2000). *Evaluation at Meriden Quarry, Solihull*. Worcestershire County Council Archaeological Services Report.

Table 2: Aerial photographic survey - all sites recorded within study area

Unique identifier	AP site	Site type	Period	NHER	NGR	Location	Present condition	Description	AP reference (s)
N/A	B01	Curvilinear ditched enclosure	Unknown	NA	SP 178 853	School Rough	Eroded	Semi-circular crop marked ditched feature appearing in field, recorded from the air in 1992. This feature also shows clearly at Google Earth 1999. The ditched feature is cut by a modern field boundary and therefore is of pre-modern date. This site is of high significance.	Oblique SP 1785/1and2, 24-26 Google Earth 1999.
N/A	B02	Boundary	Post medieval	NA	SP 176 861	Alcot Wood	Eroded	'L' shaped crop mark, possible old field boundary. This site is of no, or very low, significance.	Oblique SP 1785/6and7, 18-25, 27-29
BICo45	B03	Medieval fields, boundaries and pits which are possible tree boles, but could be other cut features of unknown origin	Medieval post medieval and possibly natural	NA	SP215 845	Little Packington	Eroded. Ploughed out, extant in subsoil	Oblique photos show large dark toned pits as soil marks and linear features which are former field boundaries. Vertical photos show eroded ridge and furrow and a possible headland. The pits may be tree boles in an area which contains a reduced woodland, but this is not a certain interpretation. This site is of moderate significance.	Vertical RC8/IJ125-6 Oblique SP 2184/001-007
BICo17	B04	Hall, garden and grass marked foundation remains. Medieval fields	Medieval post medieval	Grade II* listed building [1116473] Grade II* listed park and garden [1001193]	SP219 838	Packington Hall	Eroded, but present in top and sub soils	Additional building/wing on southern side of Packington Hall shows as linear grass marked features in the lawn on vertical aerial photographs and at Google Earth 1999. Also buried ridge and furrow showing on vertical RAF/58/2947 320-1 and oblique SP2283/6. The current house is built on the foundations of a 16th/17th century house and the grass marked features may be the remains of the earlier building. This site is of high significance.	Vertical RAF/CPE/UK12546/3304-6, RAF/541/256 4441, RAF/BG1/TUD/UK/16 5135, RAF/58/2947 320-1 Oblique SP2283/6 ES 39-41 1950 fr81-21951. Google Earth 1999.

Unique identifier	AP site	Site type	Period	NHER	NGR	Location	Present condition	Description	AP reference (s)
BICo38	B05	Medieval fields and sub rectangular features	Medieval and unknown	NA	SP190 825	Grange Farm	Eroded	Eroded ridge and furrow and headlands. The ridge and furrow was eroded by 1961 but still visible in 1976. Vertical MAL/71115 175 shows two sub-rectangular light toned areas within the ridge and furrow, which may be contemporary features, or modern agricultural features. This site is of moderate significance.	Vertical RAF/58/4652 137and8, 148 RAF/58/921 5155-7, 5194-6 RAF/3G/TUD/UK/16 5070and1, 5214and5, OS/76024 16-18 Vertical MAL/71115 175 RC8/JD80-1, 218 ZknFJ/153 Oblique SP 1983/1 SP 1886/1 Google Earth 2011.
N/A	B06	Boundary and possible crop marked ditched enclosure	Post medieval and unknown	NA	SP 207 859	Bannerley Wood	Eroded	Possible field boundary showing as a pale crop mark with dark edge. Possible sub-circular single ditched enclosure or other feature which shows on one occasion only, at Google Earth in 2011, as a clear mark in crops. This site is of high significance.	Vertical MAL/73030 20and1 Google Earth 2011.
N/A	B07	Medieval fields	Medieval	NA	SP216 849	Brook Farm	Eroded	Ridge and furrow, upstanding in 1946, buried and only traces visible after 1959. This site is of moderate significance.	Vertical RAF/CPE/UK 2469 3016-19 RAF/3G/TUD/Uk/16/52 68-70 RAF/58/4652 139, RAF/58/2947 305
BICo71	B08	Sub-circular feature	Unknown	NA	SP187 838	National Exhibition Centre (NEC)	Destroyed	Destroyed sub-circular feature which may have been a small quarry or possible ploughed out round barrow. This site is of no, or very low, significance.	Vertical RAF/CPE/UK/2469 3021and22, 3114 RAF/58/2947 316and7
N/A	B09	Linear earthwork adjacent to medieval fields, moat, associated water course, fishpond and farmhouse which lie just outside the study area to the west	Medieval	Outside area: Moat [331643] SP18NE12 Farmhouse NHER No. [514385]	SP177 851	Marston Green	Extant earthworks which are slightly eroded but visible in 2003.	The portion of this area which lies within the study area is defined as site B 09, to the east of a watercourse. It contains a linear earthwork which is visible in 2003 which could be part of the modern landscape or contemporary with a moat, fishpond and fields to its west. The features are highly visible in suitable lighting at Google Earth timeline 2003. This site is of moderate significance.	Vertical RAF/CPE/UK/2469 4022 RAF/543/1311 357 RC8/IA190 RC8/IJ134 Google Earth 2003.

Unique identifier	AP site	Site type	Period	NHER	NGR	Location	Present condition	Description	AP reference (s)
N/A	B10	Boundary	Post medieval	NA	SP 213 853	Brook Farm	Eroded	Possible former boundary showing as pale toned crop mark. This site is of no, or very low, significance.	Vertical MAL/73030 20and1
BIC004	B11	Moat, medieval fields, Hydrological features and possible drainage or moat feeders	Medieval and post medieval	Moat NHER [34155] SP28SW4	SP218 832	The Mill Farm	Eroded	Ridge and furrow, which was upstanding in 1946. Traces of eroded ridge and furrow remained until 1985. A deep straight ditch was visible and extant in 1946 and is likely to be part of a moat feeder or drainage system. The moat is not visible in 1946. Google Earth shows some slight earthworks in 2006 and 2007, which may be the remains of the recorded moat at this site which was discovered during field investigation and noted on the NHER. This site is of moderate significance.	Vertical RAF/541/213 3140and1, 4140 RAF/3G/TUD/UK/16 5136-9, 5204-8 MAL/67075 48, MAL/81009 4, MAL/73013 51 RC8/ID16-7 Google Earth 2005 and 2007.
N/A	B12	Three sub-circular features	Unknown	NA	SP182 877	Chelmsley Wood	Destroyed (overbuilt)	Three sub-circular, possibly slightly mounded features, of unknown origin which are now destroyed by modern buildings. This site is of no, or very low, significance.	Vertical RAF/540/881 5106-7, RAF/58/2947 308-9
N/A	B13	Medieval fields	Medieval	NA	SP 183 877	Baco Bridge	Eroded	Buried ridge and furrow which shows as marks in crops. This site is of moderate significance.	Vertical RAF/543/1311 (F22) 357
BIC046	B14	Medieval fields	Medieval	NA	SP 203 838	Park Farm	Eroded	Field boundaries and buried ridge and furrow. There are no definite indications of a Deserted Medieval Village (DMV) in this area, but the former heavily eroded medieval fields are visible. This site is of moderate significance.	Vertical RAF/58/2947 317-9
BIC074	B15	Possible quarry or marl pit	Unknown possibly post medieval	NA	SP 211 863	Packington Lane	Eroded	Light and dark toned mark in crop indicates the position of a probable former marl pit or quarry. This site is of no, or very low, significance.	Vertical RAF/58/2947 304-5
BIC052	B16	Former boundaries and possible quarrying	Post medieval	NA	SP 204 840	Bicke Hill	Eroded	Former boundaries which shows as marks in crops and soil, photographed from the air in 1935 and 1973. Also evidence for an area of possible quarrying or a former marl pit. This site is of moderate significance.	Vertical MAL/72105 51-3 Oblique SP 2084/1-4
BIC034	B17	Medieval fields	Medieval	NA	SP201 835	Bicke Hill	Eroded	Eroded ridge and furrow. DMV not visible however water meadows were visible in 1946 and some very slight possible earthworks which are potentially associated with a possible DMV. The ridge and furrow was still visible in 1992. Possible negative earthworks (a possible moated building or DMV evidence) are visible; also two sub-circular depressions, possibly quarry pits or ponds. These features are extant as seasonal ponds and are visible at Google Earth in 2001. This site is of high significance.	Vertical RAF/CPE/UK/2548 3307-8 RAF/3G/TUD/UK/16 5140-6, 5209-13 OS/92104 015RAF/3G/TUD/UK/16 5140-4 and 5211-3 Google Earth 2001.

5.7 Interpretation

Prehistoric periods

- 5.7.1
- The study area carries potential for heritage assets dating to the prehistoric periods as described above, but there are very few traces of evidence for this on aerial photographs. This may be due to the large proportion of built areas and quarries and overlying ridge and furrow. There are two sites which indicate possible potential for prehistoric finds at Bo1 and Bo6, but these are undated.
- 5.7.2
- Two as yet undated crop marked sites lie outside and to the south of the study area, to the south east of Meriden Quarry. These sites demonstrate potential for possible prehistoric deposits. These are potential eroded Bronze Age barrows (burial mounds) ditches and a pit alignment, overlain by eroded ridge and furrow.

Romano-British period

- 5.7.3
- The study area carries some possible potential for heritage assets dating to the Romano-British period as described above, but there are no direct dated traces of evidence for this on aerial photographs within the study area. This may be due to the large proportion of built areas and quarries and overlying ridge and furrow. There are two sites which indicate possible potential, at Bo1 and Bo6, but these are as yet undated.

Early medieval period

- 5.7.4
- The study area carries some possible potential for heritage assets dating to the early medieval period, but there are no direct dated traces of evidence for this on aerial photographs within the study area. This may be due to the large proportion of built areas and quarries and overlying ridge and furrow. A polygonal ditched enclosure, visible on aerial photographs as a crop marked site, lay to the south and outside of the study area at Meriden Quarry. Evaluation dated this feature to the early medieval period¹⁴.

Medieval period

- 5.7.5
- The study area contained widespread evidence for the presence of eroded medieval ridge and furrow at Bo3, Bo4, Bo5, Bo7, Bo9, B11, B13, B14 and B17, which are associated with moated sites and buildings in some cases.
- 5.7.6
- The majority of the area was likely to have lain in the outfields to medieval settlements which may have been overbuilt by modern infrastructure.

Post-medieval period

- 5.7.7
- There is the expected crop marked evidence for the positions of former post enclosure boundaries and some localised quarrying at Bo2, Bo6, B10, B15 and B16. These are commonly seen as crop marks and indicate areas where the fields have been recently enlarged to facilitate modern agriculture.

Modern period

- 5.7.8
- There are no visible modern military sites visible within the area, or other sites which form a part of the modern historic environment outside of the used modern infrastructure. There are

military decoy and 'starfish' sites which were constructed to attract bombers in World War II (WWII) away from conurbations and factories, but these lie outside the study area.

Undated features

- 5.7.9
- Two sites, Bo1 and Bo6, are undated crop marked features which have been newly identified on aerial photographs. Their origin is unknown, but they are likely to be pre-modern.

5.8 Conclusion

- 5.8.1
- Aerial photographs taken between 1935 and 2013 show that parts of the study area were used for farming in the medieval period, as they are today.
- 5.8.2
- Portions of the area have also been used for sand and gravel extraction and there is a high proportion of modern infrastructure and built up areas.
- 5.8.3
- There is evidence for some undated ditched enclosures. This is shown by crop marked sites at Bo1 and Bo6. There is potential for possible prehistoric and Romano-British finds, as evidenced by recorded findspots and the presence of some crop marked sites, described above.
- 5.8.4
- This evidence is likely to be present over an unknown proportion of the area, but is not visible on current and historical aerial photographs. This is due to either unsuitable environmental conditions, lack of systematic aerial survey or, more likely, by the masking of evidence by overlying medieval and post medieval agricultural features and modern buildings and infrastructure.
- 5.8.5
- Statutorily protected buildings at Packington Hall and moated sites are set within some areas of medieval fields. These fields are less eroded and are recorded here as sites of higher significance due to the association of the field systems with a known building or structure within its landscape setting. A former building foundation has also been recorded at Packington Hall which may be an earlier phase of this Grade II* listed structure.
- 5.8.6
- These assessments of significance may change in accordance with further investigations or project requirements at a future date and are indicative of the results of aerial photographic evidence alone.
- 5.8.7
- There is evidence for possible water meadows and water management sites in the areas adjacent to watercourses which may be post medieval in origin. These show as slight cut features in the floodplain, with no direct evidence for linear drains and panes. However, they indicate past management of the floodplain, possibly to facilitate early grazing.
- 5.8.8
- Further detailed mapping may be undertaken from historical and contemporary aerial photographs, if necessary to the requirements of any future ground works, to locate specific features if required at sites Bo1, Bo4, Bo6, Bo9 and B11. Mapping of the exact extent of residual ridge and furrow may indicate areas at B17 where possible settlement traces may be sought using ground based methods of investigation if necessary. These traces, if indeed they exist here, cannot be detected from available aerial photographs with any degree of certainty.
- 5.8.9
- Figure 17 indicates the significance of the sites identified from aerial photographs in terms of their current preservation and potential for preservation of archaeological deposits and/or other heritage assets and their potential heritage importance.

¹⁴ Ibid

- 5.8.10 Assessment of significance has been based on the condition and preservation of the recorded features as evidenced by aerial photographs, with consideration where appropriate for their statutory status if any.
- 5.8.11 Alterations to the significance of individual sites or areas may be appropriate in the light of the findings of the wider heritage assessment during the scoping process and of any required non-intrusive or intrusive assessments and evaluations which may be appropriate in the future.
- 5.8.12 Two crop marked possible enclosures, Bo1 and Bo6, are currently undated, however they may be of prehistoric or Roman-British date and therefore of high significance.
- 5.8.13 Bo4 is the traces of foundations, which may form part of an earlier building at Packington Hall (Grade II* listed building). B17 is an area of eroded medieval fields and possible slight earthworks to the east of the NEC, where there is some potential for traces of medieval settlement. However, there were few traces of any features here that are indicative of a DMV, and it is likely that any settlement may have lain to the east. Due to their locations, these sites are of high significance.
- 5.8.14 Seven sites, Bo3, Bo5, Bo7, B11, B13, B14 and B16, are eroded but traces of the features remain in the top or sub soils. They carry moderate significance for the preservation of buried deposits or extant features which may comprise parts of the relict past landscape, or slight upstanding remains of earthworks which comprise former landscape features.
- 5.8.15 Due to the study area being overbuilt and the extent of post medieval boundaries, four sites, Bo8, B10, B12 and B15, are no longer extant and carry little heritage significance beyond their contribution to the appreciation of the extent of the past landscape.

5.9 References

- 5.9.1 1st Edition Ordnance Survey maps
- 5.9.2 Griffin, S.; Jones, L.; Pearson, E. and Woodiwiss, S. (2000). *Evaluation at Meriden Quarry, Solihull*. Worcestershire County Council Archaeological Services Report.
- 5.9.3 Lang, N. (1988). *The Somers, Meriden: Trial Excavation*. West Midlands Archaeology CBA Regional Group 8 32/1989 104-105.
- 5.9.4 National Heritage Environment Record (NHER) and former National Monuments Record (NMR).
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5.10 Figures



Figure 15: Aerial photographic survey - study area

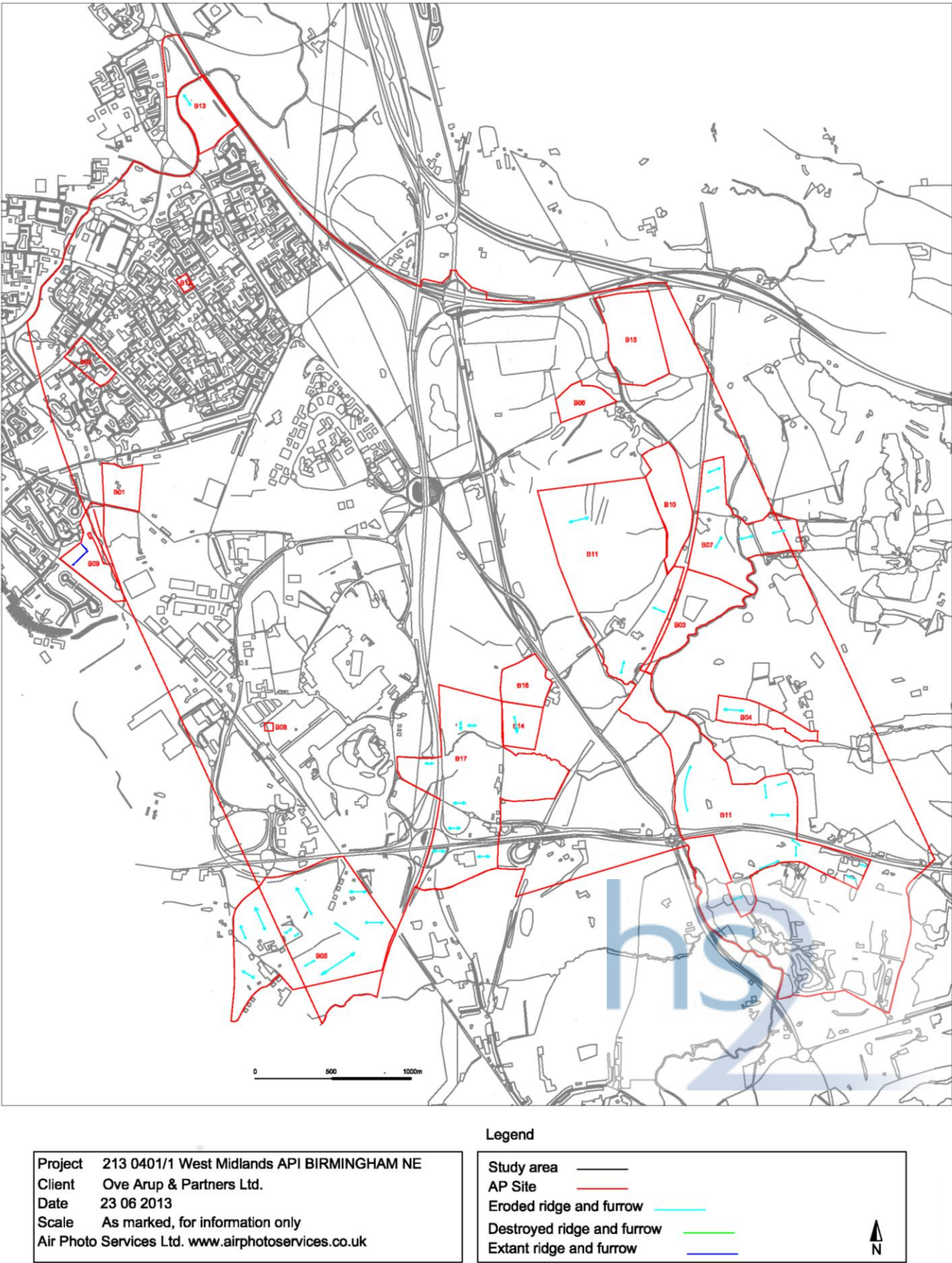


Figure 16: Aerial photographic survey - sites recorded from aerial photographs

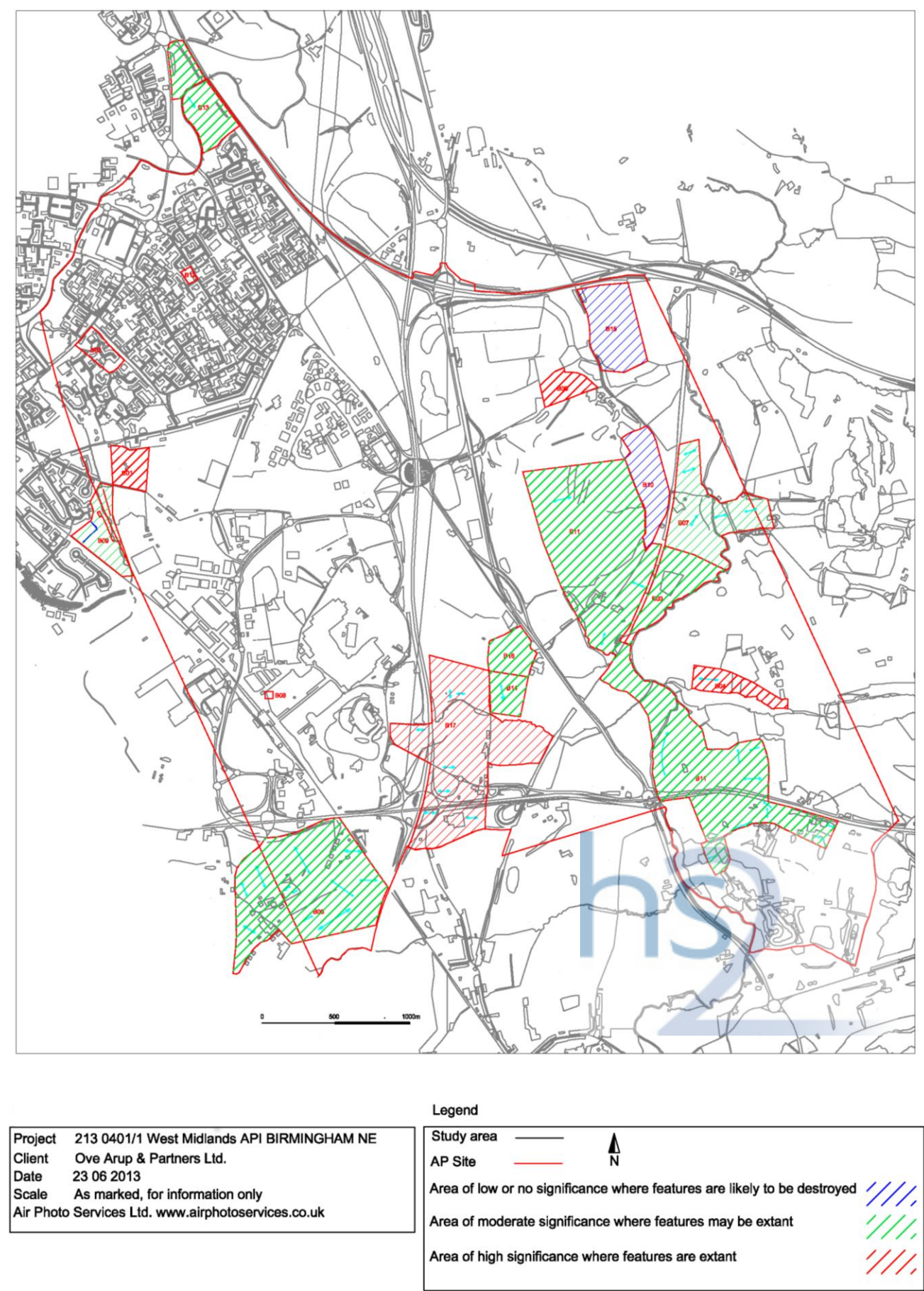


Figure 17: Aerial photographic survey - significance of sites recorded from aerial photographs